# Improved Braze Alloy for Drilling Applications

## Abstract

A down hole cutting tool includes a cutting element support structure. The cutting element support structure has at least one cavity formed therein. A cutting element is disposed in the cavity. Braze alloy is also disposed in the cavity between the cutting element and the cutting element support structure. The braze alloy comprises between about 0.5% and about 10% by weight of at least one selected from the group of gallium (Ga), indium (In), thallium (Tl). Methods for building a down hole tool using the braze alloy are also disclosed.